WEST Search History

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DATE: Tuesday, December 14, 2004

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☐	L3	5922617.pn.	2
☐	L4	L3 and gel pad	0
☐	L5	solid support same gel pad	38
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☐	L7	(protein near (nucleic acid or DNA or RNA))	51230
☐	L8	L7 and gel pad	262
☐	L9	L8 and (immobiliz$ near gel pad)	5
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	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ		
☐	L11	krylov-A$.in. or Mirzabekov-A$.in. or Prokopenko-D$.in.	305
☐	L12	(nucleic acid same protein same interaction)	10376
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☐	L14	gel pad same immobiliz$	89
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☐	L18	measur$ same melting temperature	4626
☐	L19	L18 and L12	108
☐	L20	L19 and L14	2
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☐	L22	10/035042	1
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L24: Entry 1 of 2 File: USPT Jan 27, 2004

DOCUMENT-IDENTIFIER: US 6682893 B2
TITLE: Gel pad arrays and methods and systems for making them

Brief Summary Text (8):
In general, the invention features, a method of providing a gel having a substance disposed within the gel. The method includes: (1) providing a substrate on which is disposed a gel, e.g., a gel pad or an array of gel pads, and wherein said gel is an intelligent gel, capable of existing in an expanded and a contracted state; (2) contacting the intelligent gel, while in the expanded state, with the substance, e.g., a solute in a solution, and allowing the substance to enter the gel; (3) causing the expanded intelligent gel to contract, wherein upon contraction molecules of the substance remain in the gel, thereby forming a gel having a substance disposed, e.g., concentrated or captured, within the gel.

Brief Summary Text (22):
causing the gel of step 3 to expand, e.g., by exposing it to, e.g., temperature, and contacting the gel while in the expanded state, with a substance, e.g., a solute in a solution, and allowing the substance to enter the gel; causing the expanded intelligent gel to contract, wherein upon contraction molecules of the substance remain in the gel. The substance can be the same substance as in step 3 (allowing a further concentration of the substance) or can be a different substance.

Brief Summary Text (32):
The gel can incorporate reagents, such as polynucleotide probes for capturing fragments of DNA from a solution; alternatively, such reagents can be added after the array has been formed.

Brief Summary Text (37):
In a preferred embodiment the intelligent gel includes, an enzyme, e.g., glucose oxidase, and the reaction of the enzyme with its substrate, e.g., glucose oxidase with glucose, changes the pH of the gel. Thus, in the presence of the analyte, e.g., glucose, in a sample solution which is brought into contact with the gel pad, the gel pad will shrink. A gel pad can be provided adjacent to a piezocrystal, such that changes in gel pad swelling produce a piezoelectric signal, which can be detected and correlated with the glucose concentration.

Brief Summary Text (46):
In a preferred embodiment, a layer of an intelligent gel is disposed between the substrate and the gel layer. A phase change can be induced in the intelligent gel, e.g., to promote transfer of the gel layer form the first substrate to the second substrate. For example, the first substrate can be coated with a thin layer of an intelligent gel such as described above, prior to the deposition of the gel pads on the first substrate. When the first and second substrates are placed into close contact, the intelligent gel can be liquefied or otherwise modified to promote the release of the gel. For example, for an intelligent gel, such as "Smart Hydrogel", which liquefies at cooler temperatures, liquefaction can be accomplished by cooling the first and/or second substrate. When the intelligent gel is liquefied, the gel pads disposed on the intelligent gel layer on the first substrate cannot adhere to the first substrate, and are transferred to the second substrate. Similarly, for